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ABSTRACT

This theme issue on acceleration of gifted students offers an Ontario (Canada) perspective on early entrance to school and grade-skipping. It begins with a history of acceleration programs and then outlines their current status, with less than 40 percent of school boards with gifted programs using some form of acceleration. It goes on to analyze acceleration's effectiveness; outline reservations of educators; examine research on social and emotional effects of acceleration; and review identification of candidates for acceleration. Guidelines on how and when acceleration should be used are presented, pointing out that a comprehensive assessment must include noncognitive factors, that acceleration of cohorts of children can help avoid social difficulties, that the system's readiness to support the child must be assessed, and that the possible consequences of not accelerating the child should be considered. A concluding section revisits the definition of acceleration, concluding that it is not simply a controversial theory but a recognition of the needs and skills of individual students. (Contains 24 references.) (JDD)

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SCHOOL ACCELERATION: WHAT DOES THE RESEARCH SAY?

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What is Acceleration?

Pressey gave the classic definition of acceleration in 1949, as "progress through an educational program at rates faster or ages younger than conventional." (Southern and Jones, 1991). "Acceleration" as a term applies to a wide range of educational strategies that move students' education ahead in a rapid fashion (Harris, 1981). These different options apply to students from kindergarten through university (for example, early admission to university or college), and apply to individual subjects (one of the most well-known acceleration options is the American Study of Mathematically Precocious Youth) as well as the entire curriculum.

Acceleration is normally thought of as applying to gifted children, but being classified as "gifted" is not necessary for some types of acceleration. For example, with Ontario's program and diploma requirements it is possible for secondary students to complete their secondary diploma and the six Ontario Academic Credits (OACs) needed for admission to university, in four years rather than five. However, acceleration is usually associated with gifted elementary students and with two methods: **early entrance** to school, where a gifted child enters kindergarten or grade 1 one or two years earlier than the usual beginning age; and **grade-skipping**, where a learner is double-promoted to bypass one or more grade levels. (Rogers and Kimpston, 1992.)

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Since these two methods of acceleration have been the most controversial and have been the subject of most research, this paper will concentrate on them.

History

There is very little in the way of properly documented history of acceleration programs. Fleming (1990) states that *recognition* of the special learning needs of Canadian gifted students is recent: in looking at the British Columbian education records of 1872, 1922 and 1972, there was little to suggest any social or pedagogical awareness of such students. Gifted-education practitioners such as Southern and Jones (1991) note that acceleration is a fairly recent educational option: the idea that children should remain with their chronological peers was not widely held before the mid nineteenth century. It was expected that student performance would mandate where students were placed and when they graduated. However, in the early twentieth century, changes in the educational system-- in particular, mandatory attendance of children, an increasing graduation rate, and consequent increases in enrollment--along with changing theories of child psychology, led to the formalization of age-grade structure. (Daurio, 1979.)

Modern research on acceleration is usually thought to have started with Terman and Oden's detailed longitudinal studies of gifted children in California (from 1916 to 1959),

which found that acceleration had very positive academic and social effects for gifted children; their findings were corroborated by Hollingworth's independent investigation of gifted children in the New York City public school system in the 1930's. In the United States, acceleration programs have had temporary periods of expansion (the 1920's, during World War II, and following the launch of Sputnik in 1957) followed by periods of decline. As Starko (1990) noted when examining the life and death of an American gifted program, such programs "are frequently short-lived, coming into existence for a period of time and fading as other innovations come to the forefront."

Current Status

Although Shore et al., in Recommended Practices in Gifted Education (1991), state that "there is universal endorsement that acceleration in some form should be one of the services in any program for the gifted", in fact acceleration is infrequently implemented, in both the United States and Canada. One article claims that American acceleration programs have been virtually eliminated (Howley, 1987). Harris (1981) in writing about the Canadian situation, notes that "despite all of the positive evidence in favour of acceleration, hardly anyone does it. There is a very definite conflict between what the literature reports on acceleration and what is actually implemented in the schools." Quinn (1992), in a national survey of Canadian gifted programs, found acceleration was the seventh most common of ten types of gifted education offered to students: less than 40 percent of school boards with gifted programs used some form of acceleration, compared to 95 percent who offered enrichment programs.

How Effective Is Acceleration?

There have been a number of studies that have summarized literature on acceleration. Each has shown that acceleration is an effective academic option for gifted children. In fact, of hundreds of studies on acceleration done since World War One, virtually all have shown positive effects.

Daurio (1979) looked at studies on acceleration and enrichment available at that time and concluded that:

- No studies had shown enrichment to provide superior results over accelerative methods.
- Accelerated students are shown to perform at least as well as, and often better than, "normal-aged" control students, on both academic and nonacademic measures.

Kulik and Kulik (1984) did a meta-analysis of findings from 26 controlled studies on the effects of accelerated instruction on elementary and secondary school students. The analysis showed that examination performance of accelerants surpassed by nearly one grade level the performance of nonaccelerants of equivalent age and intelligence. Examination scores of accelerants were equivalent to those of same-grade but older, talented nonaccelerants.

A later meta-analysis by Kulik and Kulik (1992) examined five distinct programs that separate students by ability, including enrichment and acceleration. They concluded that effects of grouping are a function of program type. Programs of enrichment and acceleration, which involved the greatest degree of curricular adjustment, had the largest effects on student learning. Of the two, acceleration had much more pronounced effects on student learning than enrichment.

A review by Rogers and Kimpston (1992) looked at 19 major research syntheses covering a total of 314 quantitative or qualitative studies of a number of types of acceleration. They found evidence clearly pointing to the academic effectiveness of both early admission, and grade-skipping. Grade-skipping for bright children appeared most effective when done in Grades 3-6.

Reservations of Educators

Acceleration is unusual in the field of educational research in that there is little controversy over its academic effectiveness. Instead, the most important reason for the infrequent use of acceleration is thought to be the reservations of educators around social and emotional issues. For example, Quinn (1991) notes that many educators believe that radical acceleration (grade-skipping) deprives students of valuable social interaction with others in their age group. A survey of American principals, teachers, gifted child co-ordinators, and school psychologists (Southern et al., 1989) indeed confirmed that practitioners consistently expressed conservative sentiments toward the value of acceleration as an appropriate intervention for gifted young children. Teachers and principals were more negative than gifted program coordinators or school psychologists. Respondents felt that accelerants were capable of meeting the academic demands of higher grade level placements, but had concern about students' social and emotional adjustment. The authors suggested that these concerns were based on "common sense" notions that were difficult to confront. Teachers might recall only those students who experienced difficulty, or attribute any difficulty experienced by an accelerated student to the accelerated process.

Respondents in the study cited personal experience as important in shaping their opinions more frequently than professional literature, teacher training, or experience of their peers. Southern et al. noted, however, that very few respondents had direct experience with accelerated children, and when a respondent had direct personal or family experience with acceleration, a more favourable attitude was apt to be reported. They concluded that "while a great deal of literature about the educational acceleration of gifted children exists, it is apparent that the positive results of acceleration have not been demonstrated to practitioners in the field." This was, in fact, a finding very similar to Braga (1971) who had surveyed practitioners nearly twenty years earlier. (Daurio, 1979; Southern et al., 1989; Jones and Southern, 1991).

Research on Social and Emotional Effects of Acceleration

Since the acceleration research of Terman in the 1920's, there has been a pattern of research studies advocating the positive features of acceleration, followed by cautionary advisories about the potential negative effects of acceleration (usually by educators and psychologists). The original reservations tended to be based on theoretical or anecdotal grounds. Among psychologists, the influential Dr. Arnold Gessell's theories of child development stressed the importance of children's development on age: acceleration would be harmful to students because it would place students in a group situation before they were ready for it. While educators no longer co-relate age and psychological and intellectual development as rigidly as was done by Gessell, this reservation is still an important one (Elkind, 1988a; Howley, 1987).

As well, there have been a number of school-readiness studies, especially in the 1950's and 1960's, which demonstrated possible negative social-emotional effects for early admission and grade-skipping. These studies, however, have methodological limitations that make them difficult to accept as definitive, as noted by Jones and Southern (1991): sampling limitations (e.g. none of the school-readiness studies looked at children who were selected because of their high achievement); controversy about early admission and acceleration in the school boards where the studies were done, which may have influenced the results; "fishing" for statistical significance among many variables (in one study, 70 analyses were conducted); and doubtful evaluation criteria, such as standardized tests that were not referenced to local curriculum content, or tests that have limited value as indicators of achievement and adjustment. In conclusion, Jones and Southern state that

> educators' attitudes towards acceleration have been braced by the school-readiness literature, but virtually none of the conclusions from that research can be justified. The school-readiness studies are, at worst, fraught with severe methodological deficiencies and, at best, misapplied. Policy implications that have been drawn from these studies will do a disservice to precocious children and children who have not been adequately prepared for schooling.

Thus, many of the reservations about acceleration may be based, as Daurio concludes, on "preconceived notions and irrational grounds, rather than on an examination of the evidence"; or looking at dated or inappropriate research. Yet, at the same time, proponents of acceleration have not been able to demonstrate beyond doubt that acceleration is a risk-free option for students. At issue are not negative effects of acceleration; rather, the concern is that the full effects of acceleration are not known.

In their 1984 meta-analysis, Kulik and Kulik found few studies on the social and emotional effects of acceleration: findings of the studies that did exist were inconsistent. In their later 1992 analysis, Kulik and Kulik found only a small number of studies which investigated social-emotional effects and findings were not entirely consistent from study to study. On the average, however, acceleration appeared to have little or no effect on students' attitudes toward school, participation in school activities, popularity, or adjustment.

The literature review by Rogers and Kimpston (1992) found that, from the research available, social and psychological adjustment was neither enhanced nor threatened by early admission. However, they did not find substantial information on the social and emotional outcomes of acceleration and thought that "much is still needed before we have the whole picture."

Cornell et al. (1991), in their stringent review of research on social and emotional development in accelerated students, emphasized that research showing no adverse social-emotional effects, or positive social-emotional effects, had limitations: for example, not using appropriate control groups, or not using standard and validated adjustment measures. As a result, Cornell et al. were very conservative in their conclusions about early school entrance: that the 'most liberal' conclusion of the literature is that early entrance can be considered if the applicants are carefully screened for social and emotional maturity as well as academic aptitude. They noted that the literature on grade-skipping is considerably less extensive, and less controversial, than that on early school entrance. Among the reasons suggested for the greater acceptability (or lesser controversy) of grade-skipping was

that it is far easier to assess a candidate for skipping than for early admission, because "educators have the benefit of knowing how well the student actually performs in school".

Thus, the whole issue of social and emotional effects of acceleration is not as clear as either its advocates or detractors claim. The school-readiness studies which suggested negative social-emotional effects for early admission and grade-skipping have limitations. Yet, at the same time, the many studies showing the positive effects of acceleration have not completely proven acceleration to be 'risk free'. Perhaps one reason for this is methodological. As Kulik and Kulik noted in their 1984 review of acceleration studies, "the measures employed in the studies were paper-and-pencil tests. These are reasonable criteria for judging success in school; they are not the sort of criteria usually used for measuring success in life." And Jones and Southern claim that "part of the problem in assessing social-emotional adjustment is that it is a nebulous concept. It is difficult to describe and measure adequately. The narrow measures that are typically used hardly capture the complex nature of the traits to be measured."

Identification of candidates for acceleration

Some practitioners have concerns about the identification of gifted students, for acceleration as well as for other gifted programs. A study by Klausmeier et al. (1987) of assessment practices and training needs of American school psychologists showed that school psychologists had doubts about their ability to measure giftedness. While they rated their training in identification of learning disabilities as above average, they thought their training in recognizing giftedness was less adequate, and recognizing gifted/learning disabled was below average. Many considered their training in assessment of minorities and low socio-economic populations to be below average or completely lacking. As well, many thought that tests of creativity should be part of an assessment of gifted programs, yet they perceived their training as inadequate in the use of these measures. Instead, Wechsler IQ scales were used most extensively. Concern was expressed over these methods of identification-- in particular, over the low representation of minority and disabled students. In 1989, the President-Elect of the Council for Exceptional Children wrote that

> students from culturally different backgrounds, students with handicapping conditions, students from sparsely populated areas, and gifted girls still face barriers that often preclude their participation in such programs (Parke, 1989).

In Canada, the situation appears to be somewhat different: according to a survey by Kluckmann, teacher nomination is the most frequently reported method of identification of gifted children; achievement tests and demonstrated performance are also accorded primary importance, ahead of intelligence tests. However, teacher identification *by itself* is not considered an entirely reliable method of identifying gifted children. Dutiful students are more readily identified; the 'brilliant but bored', badly taught, or learning disabled student could be missed. Kluckmann states that "teacher nomination might be a useful and important factor of an identification model, but there is a strong need to evaluate just how decisions are made and what guidelines are provided for teachers in order to ensure consistency in identification procedures" (Kluckmann, 1987).

Callahan and Hunsaker (1992) emphasize that there is not one way to select students,

but that types of identification should depend on what type of acceleration program is being offered. Measures must be based on characteristics that students should exhibit for successful adjustment to the placement. Early entrance to kindergarten programs may use attention span, language facility, or other indicators of advanced development. Grade-skipping programs may use achievement levels as measured by standardized tests or grades.

How and when should acceleration be used?

According to Shore et al. (1991) the evidence is overwhelming that acceleration in some of its many forms should be included in any comprehensive set of services for the gifted. Most authorities believe that acceleration should take place only after careful consideration and planning; that communication with parents and teachers is pivotal; and that students should be carefully monitored. Among the specific suggestions of experts in the field (based on knowledge of gifted children and experience in the field, rather than on empirical evidence):

- When it comes to deciding on the best service for an individual student, *the needs, interests, strengths, and weaknesses* of the individual are the most important information (Shore et al., 1991).
- A comprehensive assessment must include *non-cognitive factors*, such as social-emotional adjustment, health, and environment. And regardless of the particular approach considered, it is normally preferable to screen students carefully "because carefully selected students are more likely to succeed than students who enter programs merely by student or parental choice" (Callahan and Hunsaker, 1992).
- Students should be *clearly interested* in accelerating, and be *socioaffectively mature* (Gagné 1986; quoted in Shore et al., 1991).
- *Parent agreement* is strongly advised, although their active support is not as necessary (Gagné 1986; quoted in Shore et al., 1991).
- Acceleration of *cohorts* of children can help avoid social difficulties (Gagné 1986; quoted in Shore et al., 1991).
- *Communication* between sending and receiving teachers and/or programs is very important (Callahan and Hunsaker, 1992).
- It is important to assess the *system's readiness* to support the child. For example, teachers may have attitudes opposed to acceleration; if so, alternatives to acceleration should be considered (Howley and Howley 1985; Callahan and Hunsaker, 1992).
- Admission should be made on a *trial basis* (Callahan and Hunsaker, 1992).
- Once a placement is made, it is necessary to *monitor* how well the student is doing (Callahan and Hunsaker, 1992).
- The possible *consequences of not advancing* a precocious child should be considered: poor study habits, apathy, lack of motivation, and maladjustment (Feldhusen, 1992).

"Acceleration": the definition revisited

Several experts on gifted education think that the term "acceleration" is rather misleading and is in itself a source of friction. Feldhusen (1989) says acceleration is a misnomer because the process is really one of bringing gifted youth up to a suitable level of instruction commensurate with their achievement levels and readiness, so that they are properly challenged to learn new

material. Southern and Jones (1991) believe that the difficulty is in part a semantic confusion.

> Saying that a student has been accelerated, we seem to imply that some process has been employed to speed that student along. The term *accelerate* in everyday usage means, after all, to speed up. In the real world of schools, however, this is rarely the case. Quite often, acceleration is the administrative recognition of a students' current academic perf rmance. When a student skips a grade, it is because the school realizes that the student has mastered all the knowledge and skills to be taught at the current placement... In practice, the student is rarely "sped along". (Southern and Jones, 1991).

Elkind, often thought to be an opponent of acceleration, actually views acceleration as the wrong word to describe the recognition by schools of individual differences in ability and growth rates. He suggests that matching the curriculum to a child's abilities is not "acceleration", but developmentally appropriate teaching practice, which should be done for all children. In fact, Elkind suggests that once acceleration is interpreted as an accommodation of the educational system to the needs and abilities of the child, research on the promotion of the gifted could be used "to argue for the benefits of schools accommodating to the needs and abilities of children at all levels of intelligence" (Elkind, 1988b). When looked at in that way, acceleration becomes not a controversial theory, but a recognition of the needs and skills of individual students.

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